

Remarks

Reconsideration and allowance of this application are respectfully requested in light of preceding amendments and the following remarks.

Claim Status

Claims 1–25 were presented in the originally filed application. Claims 1, 3, 6 and 8-13 are amended. Claims 2 and 7 are cancelled. Claims 19-25 are withdrawn. Claims 1, 3-6 and 8-18 are pending. No new matter was added.

Discussion

§112 Rejections

Claims 1 and 3-18 stand rejected under 35 U.S.C. 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant traverses.

The Examiner suggests that claim 1 is rendered indefinite by the phrase “total salt content being less than 3/5 g/L of total salts”. Applicant traverses.

Applicant has amended the language of claim 1 in order to clarify the language of the claim. With this amendment, it is clear that (i) the sum of the weight fractions of sodium and chloride ions in the fermentation medium during cultivation is less than 1.75 g/L and that (ii) the total salt content (i.e. any salt) in the fermentation medium during cultivation is less than 3.5 g/L. With this clarified language the meaning of the terms in

claim 1 are clear and unambiguous. Hence, the Examiner's §112 rejection of claim 1 should be removed and the claim allowed.

The Examiner suggests that claim 3 is unclear as to what medium or step of the claimed method might incorporate the use of calcium carbonate. Applicant traverses.

Applicant has amended the language of claim 3 to include the statement that the calcium carbonate "can be added to the fermentation medium prior to and/or during cultivation" in order to clarify the language of the claim. In light of this amendment, it is now clear that up to 3 g/L calcium carbonate can be added to the fermentation medium prior to and/or during cultivation so long as the conditions of amended claim 1 are met. Hence, the Examiner's §112 rejection of claim 3 should be removed and the claim allowed.

The Examiner suggests that claims 6-13 are unclear due a lacking of antecedent basis. Applicant traverses.

Applicant has amended claims 6-13 to include the phrase "fermentation medium" in order to clarify the language of each claim as the same phrase is used in claim 1. In light of this amendment, there is no lack of antecedent basis in claims 6-13. Hence, the Examiner's §112 rejection of claims 6-13 should be removed and the claims allowed.

§102 Rejections

Claims 1, 3-7 and 9-16 stand rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,340,742 (hereinafter Barclay). Applicant traverses.

To anticipate a claim under 35 U.S.C. §102(b), a single source must contain all of the elements of the claim. See *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1379, 231 USPQ 81, 90 (Fed. Cir. 1986); *Atlas Powder Co. v. E.I. du Pont De Nemours & Co.*, 750 F.2d 1569, 1574, 224 USPQ 409, 411 (Fed. Cir. 1984); *In re Marshall*, 578 F.2d 301, 304, 198 USPQ 344, 346 (C.C.P.A. 1978). Missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference. See *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 USPQ 1264, 1271 (Fed. Cir. 1984). Where a reference discloses less than all of the claimed elements, an Examiner may only rely on 35 U.S.C. §103. See *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 780, 227 USPQ 773, 777 (Fed. Cir. 1985).

In the currently pending application, amended claim 1 is essentially directed to a method for cultivating microorganisms of the order *Thraustochytriales*, wherein the microorganisms are cultivated in a fermentation medium, (i) that has less than 1.75 g/L Na and Cl ions and (ii) that has a total salt content (of any salts) of less than 3.5 g/L, and wherein the microorganisms bring forth a production of more than 10 wt% DHA per dry biomass.

The Examiner relies on columns 23 and 24, and in particular on Table 8 in Barclay, where the effects of sodium sulphate relative to sodium chloride in the fermentation medium on the dry weight percentage of omega-3-fatty acids (such as DHA and others) and on the fatty acid production in general are discussed. However, a value of more than 10 wt.% omega-3-fatty acids is only shown for 1.5 g/L N-source and 42.1 g/L peptone addition (11.1 Gew.%) as well as for 2.0 and 2.5 g/L N-source and 38.6 and 41.4 g/L sodium glutamate addition, respectively (10.1 st.% omega-3-fatty acids each).

The Examiner's assertions with regard to novelty are wrong for a number of reasons.

First, Table 8 only discloses the percentage of all omega-3-fatty acids together. However, one having skill in the art would know that the proportion of DHA in the omega-3-fatty acids will most probably be less than 10 wt.% per dry biomass, because otherwise the content of DHA of the omega-3-fatty acids would have to be over 90%.

Second, the teaching that the content of sodium (**ions!**) per liter medium is 2.36 g/L for the fermentation medium of Example 13 does by no means indicate that the medium does not comprise any chloride - as is incorrectly assumed by the Examiner. The medium of Example 13 is based on a medium composition and not on distilled water. Fermentation media used are designated in Example 3 as M-5 medium and in

Example 8 as m/10-5 medium. The components of M-5 medium are listed and include NaCl, MgSO₄, KCl, CaCl₂ and KH₂PO₄ as well as glucose, glutamate and yeast extract. The low salt fermentation medium M/10-5 contains NaCl, MgSO₄, KCl, CaCl₂, KH₂PO₄, yeast extract, glucose, glutamic acid and NaHCO₃. Because the fermentation medium in Example 13 is not further specified, the skilled person must assume that it also contains the components specified for the fermentation media M-5 or M/10-5. Example 13 and Table 8 merely require that either NaCl or NaSO₄ are used with variations of the N-source. Accordingly, the basic medium used in Example 13 will most definitely contain chloride ions, namely at least in the form of KCl and CaCl₂ and certainly as a component of the yeast extract.

Third, Example 13 clearly specifies that the content of sodium (**ions!**) is 2.36 g/L. It follows that the counter ions associated therewith must be present in an even higher weight percentage, because Cl₂, SO₄, etc. are significantly heavier ions than sodium ions. Consequently, the salt content of the sodium salts along in the medium of Example 13 will be in excess of the limit of 3.5 g/L as is required by amended claim 1. **Moreover, the value of 2.36 g/L sodium ions for the fermentation medium of Example 13 also clearly exceeds the limitation of less than 1.75 g/L sodium and chloride ion set forth in amended claim 1.**

The Examiner also points to Table 10 in Example 15 and argues that the total weight content of sodium and chloride would be below 1.75 g/L. Unfortunately, the Examiner is simply wrong because the sodium concentration in the fermentation

medium of Example 15 alone is at least 2.37 (of 4.0) g/L by the addition of sodium sulfate. If one is to calculate the added sodium sulfate on the basis of 2.37 g/L sodium, one arrives at 4.95 g of sodium sulfate, which by itself, without the addition of any of the other salts (such as MgSO_4 , CaCO_3 , sodium glutamate and KH_2PO_4) for the fermentation medium of Example 15 will overwhelmingly exceed the limit of 3.5 g/L total salts as required by amended claim 1.

Regarding our argument relating to Example 7 in column 19, the Examiner notes that the medium is diluted to 1.5% in the lowest concentration and, hence only 0.468 g/L would remain from the original 31.2 g/L total salt content. Unfortunately, the Examiner overlooks the fact that the diluted media also includes 5 g. of glucose, 5 g. of gluconate, yeast extract, 200 mg $(\text{NH}_4)_2\text{SO}_4$ and 200 mg NaHCO_3 . Therefore, at least 5 g of glutamate salt, 200 mg of sulphate salt and 200 mg of carbonate salt are added. All of this adds up to a total salt content of 5,868 g – if one ignores the further salt content in the yeast extract. The fact that the term glutamate relates to an anion that is used in combination with a counter ion, i.e. cation, is clear from the wording of Example 7 as well as from the comparison with the medium of Example 8, for which the addition is explicitly disclosed as being in the form of glutamic acids.

Hence, the method of amended claim 1 of the instant invention clearly differs from the teachings disclosed by Barclay. Additionally, with the amended language of claim 1, Barclay fails to disclose all of the elements of claim 1. Thus, claim 1 is not anticipated by Barclay and therefore, this rejection must fail.

In reference to claims 3-7 and 9-16, “[I]f an independent claim is not anticipated by prior art, then its dependent claims, which necessarily include the limitations of the independent claim, are not anticipated either. *Kovin Assoc. v. Extech/Exterior Technologies*, 2006 U.S. Dist. LEXIS 63250 (N.D. Ill. 2006), citing *Trintec Indus., Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 1296 (Fed. Cir. 2002). Thus, claims 3-7 and 9-16 are not anticipated by Barclay and should be allowed.

Claims 1, 4-7 and 10-17 stand rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,509,178 (hereinafter Tanaka). Applicant traverses.

Again, to anticipate a claim under 35 U.S.C. §102(b), a single source must contain all of the elements of the claim. *See Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1379, 231 USPQ 81, 90 (Fed. Cir. 1986); *Atlas Powder Co. v. E.I. du Pont De Nemours & Co.*, 750 F.2d 1569, 1574, 224 USPQ 409, 411 (Fed. Cir. 1984); *In re Marshall*, 578 F.2d 301, 304, 198 USPQ 344, 346 (C.C.P.A. 1978). Missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference. *See Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 USPQ 1264, 1271 (Fed. Cir. 1984). Where a reference discloses less than all of the claimed elements, an Examiner may only rely on 35 U.S.C. §103. *See Titanium Metals Corp. v. Banner*, 778 F.2d 775, 780, 227 USPQ 773, 777 (Fed. Cir. 1985).

As stated above, amended claim 1 is directed to a method for cultivating microorganisms of the order *Thraustochytriales*, wherein the microorganisms are cultivated in a fermentation medium, (i) that has less than 1.75 g/L Na and Cl ions and (ii) that has a total salt content (of any salts) of less than 3.5 g/L, and wherein the microorganisms bring forth a production of more than 10 wt% DHA per dry biomass.

Tanaka, according to the Examiner, teaches the cultivation of thraustochytrids such as *Ulkenia sp.* In a fermentation medium having less than 3.5 g/L sodium and chloride salts, which would result in more than 10% DHA dry biomass. Looking to the salt content of the fermentation medium of Example 2, the Examiner looks to column 9, lines 10-25 and alleges that a fermentation medium having 2.6 g/L of sodium and chloride salts is disclosed therein. Unfortunately, the Examiner once again did not understand that the previously amended and newly amended claim 1 does not require that only the sodium and chloride content be less than 3.5 g/L, but instead that the total content of **all salts** in the medium must be below the 3.5 g/L limit. The allegation that 1.3 g/L $MgCl_2$, 1 g/L $NaSO_4$ and 0.3 g/L $CaCl_2$ will result in 2.6 g/L is not relevant because in order to determine the total salt content, the 3 g/L potassium phosphate, 2 g/L ammonium sulphate and the salt content of the corn steep liquor and the bases/ acids for adapting the pH must also be considered. The sum of the salts explicitly listed in Tanaka's Example 2 is 7.6 g/L, and hence, more than twice the limited value permitted by amended claim 1 for total salts.

Additionally, the Examiner contends that the total salt content of claim 1 would not be clearly defined. This argument is mute in view of the amendments to claim 1.

From the information detailed above, it is clear that the method disclosed by Tanaka according to Example 2 does not anticipate the subject matter of amended claim 1. Hence, Tanaka fails to disclose all of the elements of claim 1 and this rejection must be removed.

In reference to claims 4-7 and 10-17, “[I]f an independent claim is not anticipated by prior art, then its dependent claims, which necessarily include the limitations of the independent claim, are not anticipated either. *Kovin Assoc. v. Extech/Exterior Technologies*, 2006 U.S. Dist. LEXIS 63250 (N.D. Ill. 2006), citing *Trintec Indus., Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 1296 (Fed. Cir. 2002). Thus, claims 4-7 and 10-17 are not anticipated by Tanaka and should be allowed.

Claims 1, 4-16 and 18 stand rejected under 35 U.S.C. 102(b) as being anticipated by Appl. Microbiol. Biotechnol. 1998, vol 49, pages 72-76 (hereinafter Yokochi). Applicant traverses.

Again, amended claim 1 describes a method for cultivating microorganisms of the order *Thraustochytriales*, wherein the microorganisms are cultivated in a fermentation medium, (i) that has less than 1.75 g/L Na and Cl ions and (ii) that has a

total salt content (of any salts) of less than 3.5 g/L, and wherein the microorganisms bring forth a production of more than 10 wt% DHA per dry biomass.

To anticipate a claim under 35 U.S.C. §102(b), a single source must contain all of the elements of the claim. See *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1379, 231 USPQ 81, 90 (Fed. Cir. 1986); *Atlas Powder Co. v. E.I. du Pont De Nemours & Co.*, 750 F.2d 1569, 1574, 224 USPQ 409, 411 (Fed. Cir. 1984); *In re Marshall*, 578 F.2d 301, 304, 198 USPQ 344, 346 (C.C.P.A. 1978). Missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference. See *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 USPQ 1264, 1271 (Fed. Cir. 1984). Where a reference discloses less than all of the claimed elements, an Examiner may only rely on 35 U.S.C. §103. See *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 780, 227 USPQ 773, 777 (Fed. Cir. 1985).

The Examiner continues to allege that the teaching of Yokochi anticipates the method of claim 1, referring to Fig. 1a where the cultivation in a fermentation medium without sea water content is graphically represented. Next to 1% yeast extract and 3.0% glucose, the media of Fig. 1a contain 0 to 200 % sea water. At the first measuring point, i.e. at 0% sea water content in the medium, the proportion of the dry cell weight was about 6 g/L medium. The weight proportion of DHA is not disclosed. The subsequent measuring point was determined with a fermentation medium having 50% sea water content, i.e. with at least 17.5 g/L total salt content.

Because Yokochi has conducted his further experiments relating to the DHA yield exclusively with fermentation medium having 50% sea water content, the results achieved with this medium are irrelevant for assessing the novelty of the low salt methods of amended claim 1.

Regarding our previous argument, the Examiner now alleges that 50% salt water content in a medium, i.e. 0.5×35 g/L would result in a total salt content of 1.75 g/L. Our calculation results in 17.5 g sea water per liter of fermentation medium, a multiple of the limit value of 3.5 g/L total salt content required by amended claim 1.

The Examiner also objects to claim 1 because it does not require an actual step of producing DHA. Therefore, the claim is supposedly only directed to the use of the microorganisms capable of producing more than 10 wt.% DHA per dry mass. This allegation contradicts the wording of amended claim 1 which is directed to a method, “wherein during cultivation the microorganisms bring forth a production of more than 10 wt.% DHA per dry biomass.”

Moreover, the Examiner contends that Fig. 1a would disclose at the first measuring point – determined with a fermentation medium without sea water – a dry cell mass of 6 g/L and concludes from this that the microorganisms would produce about 2 g/L DHA, which would be more than 10% DHA per dry cell mass. It seems that the Examiner considers it feasible to deduce from the mentioning of a maximum yield of 4

g/L in the abstract and a maximum of 12 g/L dry cell weight in Fig. 1a (**starting at 75% sea water content**) a DHA concentration for the first measuring point of 2 g/L.

The numerical-mathematical as well as the logical correlation made by the Examiner in this instance is incomprehensible to the Applicant. **It is a simple fact that without sea water, 6 g/L dry cell mass is produced. The DHA content of the 6 g dry cell mass is not disclosed and cannot be deducted by any analogy.** In this respect, it is to be considered that fermentation medium without salt water is a highly deficient medium for which the dry cell mass is reduced by 50% alone. In such an extremely deficient medium, a cell cannot allow itself the luxury of producing storage oil in large quantities.

Because the method of Yokochi teaches that DHA dry weight content of more than 10 wt.% is only available with a fermentation medium having at least 50% sea water content, i.e. at least about 17.5 wt.% total salt content in the fermentation medium, the method of amended claim 1 is new and not anticipated.

Hence, with the amended language of claim 1, Yokochi fails to disclose all of the elements of claim 1. Thus, claim 1 is not anticipated by Yokochi and therefore, this rejection must fail.

In reference to claims 4-16 and 18, "[I]f an independent claim is not anticipated by prior art, then its dependent claims, which necessarily include the limitations of the

independent claim, are not anticipated either. *Kovin Assoc. v. Extech/Exterior Technologies*, 2006 U.S. Dist. LEXIS 63250 (N.D. Ill. 2006), citing *Trintec Indus., Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 1296 (Fed. Cir. 2002). Thus, claims 4-16 and 18 are not anticipated by Yokochi and should be allowed.

§103 Rejections

Claims 1 and 3-18 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,340,742 (hereinafter Barclay), U.S. Patent No. 6,509,178 (hereinafter Tanaka), *Appl. Microbiol. Biotechnol.* 1998, vol 49, pages 72-76 (hereinafter Yokochi) and *Botanica Marina*, 2002, col. 45, pages 50-57 (hereinafter Fan). Applicant traverses.

The above comments regarding Barclay, Tanaka and Yokochi are incorporated herein. The Examiner has rejected claims 1 and 3-18 as unpatentable under 35 U.S.C. 103 based on Barclay, Tanaka, Yokochi and Fan. In order to establish a *prima facie* case of obviousness under 35 U.S.C. §103(a), the reference or combination of references must teach or suggest all the elements of the claim (See MPEP 2143 below for the basic requirements of a *prima facie* case of obviousness). In this case, as shown both above and below, Barclay, Tanaka, Yokochi and Fan do not teach all the elements of claims 1 and 3-18.

As previously stated, amended claim 1 describes a method for cultivating microorganisms of the order *Thraustochytriales*, wherein the microorganisms are

cultivated in a fermentation medium, (i) that has less than 1.75 g/L Na and Cl ions and (ii) that has a total salt content (of any salts) of less than 3.5 g/L, and wherein the microorganisms bring forth a production of more than 10 wt% DHA per dry biomass.

Barclay, Tanaka and Yokochi teach a method for cultivating microorganisms of the order *Thraustochytriales* for the production of oils, DHA and/or DPA.

According to the Examiner, Barclay and Tanaka teach the cultivation in fermentation media with low amounts of sodium and chloride salts or with a total salt content of less than 3.5 g/L. As clearly demonstrated above under their 102 rejections, this allegation is simply incorrect. Neither Barclay nor Tanaka disclose a fermentation medium for producing more than 10 wt.% DHA per dry mass with less than 3.5 wt.% total salts in the medium.

Yokochi merely discloses the test fermentation of microorganisms of the order *Thraustochytriales* in the absence of sea water salt, however, without reaching or teaching the weight proportion of DHA required by claim 1. Moreover, Yokochi clearly teaches the use of at least 50% sea water content for fermenting microorganisms of the order *Thraustochytriales* for the production of significant amounts of dry cell mass and DHA.

Motivation may be lacking when the state of the art at the time of the invention in question was discovered pointed researchers in a different direction than the inventor

proceeded. Indeed, the Federal Circuit has repeatedly recognized that proceeding contrary to the accepted wisdom in the art represents "strong evidence of unobviousness." *In re Hedges*, 783 F.2d 1038, 1041, 228 U.S.P.Q. 685, 687 (Fed. Cir. 1986); *W.L Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1552, 220 U.S.P.Q. 303, 312 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984) (prior art teaching that conventional polypropylene should have reduced crystallinity before stretching and should undergo slow stretching, led away from claimed process of producing porous article by expanding highly crystalline PTFE by rapid stretching); *accord In re Fine*, 837 F.2d 1071, 1074, 5 U.S.P.Q.2d 1596, 1599 (Fed. Cir. 1988). Without a doubt, Yokochi directly teaches away from the inventive solution.

Fan teaches several genera of the order *Thraustochytriales*. The Examiner once again alleges that – at the priority date – it would have been obvious for one having skill in the art, in light of the teachings of Barclay, Tanaka and Yokochi, to cultivate microorganisms of the order *Thraustochytriales* in order to produce lipids.

However, Yokochi clearly teaches away from the use of less than 50% sea water content, i.e. less than 17.5 g/L in the fermentation medium, and hence clearly leads away from the invention disclosed in the current application. Consequently, one having skill in the art would have principally considered a total salt content of at least 17.5 g/L as an absolute necessity for a successful DHA production. In analogy, he would also have considered much more than just 1.75 g/L sodium and chloride ions necessary for a successful DHA production.

Also, one having skill in the art cannot take any prompting from either Tanaka or Barclay to cultivate microorganisms of the order *Thraustochytriales* in a fermentation medium having less than 3.5 g/L total salt, in order to produce more than 10 wt.% DHA per dry cell mass. Moreover, one having skill in the art would not expect that a fermentation with less than 3.5 g/L total salts would lead to an increase proportion of polyunsaturated fatty acids (PUFAs).

The Examiner's main argument behind her obviousness rejection is that claim 1, in the context of the specification and the dependent claims, does not completely exclude the addition of sodium and chloride salts, because the low acceptable concentration of the sub-claims must be added somehow. Applicant believes that currently amended claim 1 renders the Examiner's argument moot because it sets clear and specific limits for the total salt content and the content of both the sodium and chloride ions.

Regarding Fan, the Examiner further notes that it would teach the growth of microorganisms of the order *Thraustochytriales* in the complete absence of sodium chloride salt. This is simply not correct because for preparing the fermentation medium of Fan, at least 5% v/v inoculum having salt components are utilized. (Page 51, Column 1, Page 55, Column 2).

The Examiner claims to have established a *prima facie* case of obviousness against the instant application. MPEP § 2143 “Basic Requirements of a *Prima Facie* Case of Obviousness” states:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine references teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all claim limitations.

Regarding the third criterion, the court has stated that “to establish *prima facie* obviousness of a claimed invention, **all** the claim limitations must be taught or suggested by the prior art.” *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Applicant contends that none of the prior art references, neither Barclay, Tanaka, Yokochi nor Fan, whether considered alone or in combination with one another, teaches, suggests, or provides a motivation for a method of cultivating microorganisms of the order *Thraustochytriales* as described in claim 1 of the instant invention.

The prior art reference or combination of references relied upon by the Examiner must teach or suggest all of the limitations of the claims. See *In re Zurko*, 111 F.3d 887, 888-89, 42 U.S.P.Q.2d 1467, 1478 (Fed. Cir. 1997); *In re Wilson*, 424 F.2d 1382, 1385, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970) (“All words in a claim must be considered in judging the patentability of that claim against the prior art.”). The teachings or suggestions, as well as the expectation of success, must come from the prior art, not applicant’s disclosure. See *In re Vaeck*, 947 F.2d 488, 493, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991). In this instance, from the information detailed above, it is clear that

Barclay, Tanaka, Yokochi and Fan, whether considered individually or combined, fail to teach or suggest all the limitations of Applicant's claims.

The U.S. Supreme Court recently held that rigid and mandatory application of the "teaching-suggestion-motivation," or TSM, test is incompatible with its precedents. *KSR Int'l Co. v. Teleflex, Inc.* 127 S.Ct 1727, 1741 (2007). The Court did not, however, discard the TSM test completely; it noted that its precedents show that an invention "composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *Id.*

The Court held that the TSM test must be applied flexibly, and take into account a number of factors "in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed." *Id.* at 1740-41. Despite this flexibility, however, the Court stated that "it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements in the way the claimed new invention does." *Id.* "To facilitate review, this analysis should be made explicit." *Id.*

The obviousness rationale addressed in *KSR* was premised on combining elements known in the prior art. *Id.* at 1738-39. The *KSR* Court noted that obviousness cannot be proven merely by showing that the elements of a claimed device were known in the prior art; it must be shown that those of ordinary skill in the art would have had some "apparent reason to combine the known elements in the fashion claimed." *Id.* at

1741. See also *Ex parte Thomas J. Whalen II, et al*, BPAI 2007-4423 (2008). As stated above, there is no motivation for one skilled in the art to modify Barclay, Tanaka, Yokochi or Fan to achieve the methods claimed in the instant application.

Based on *KSR v. Teleflex, Inc.* 127 S.Ct. 1727, 167 L.Ed2d 705, 2007 U.S. Lexis 4745 (2007), the obviousness question may be broken down to: Is the invention predictable based upon the prior art? *Id.* at 1740, 721.

Simply, the answer to that question is “no.” Hindsight reconstruction is not permitted as the Federal Circuit has repeatedly warned that the requisite motivation to modify a reference must come from the prior art, not Applicant’s specification. See *In re Dow Chem. Co.*, 837 F.2d 469, 473, 5 U.S.P.Q.2d 1529, 1531-32 (Fed. Cir. 1988) (“there must be a reason or suggestion in the art for selecting the procedure used, other than the knowledge learned from the applicant’s disclosure.”) Using an Applicant’s disclosure as a blueprint to reconstruct the claimed invention from isolated piece of the prior art contravenes the statutory mandate of section 103 of judging obviousness at the point in time when the invention was made. See *Grain Processing Corp. v. American Maize-Prods. Co.*, 840 F.2d 902, 907, 5 U.S.P.Q.2d 1788, 1792 (Fed. Cir. 1988).

Only hindsight reconstruction based upon the instant specification would lead the Examiner to the conclusion that the claims in the instant application are rejected under §103 as unpatentable over Barclay, Tanaka, Yokochi and Fan. Accordingly, the instant

rejection of claim 1 must be removed. Thus, claim 1 is not unpatentable over Barclay, Tanaka, Yokochi and Fan and should be allowed.

Regarding claims 3-18, dependent claims are nonobvious under section 103 if the independent claims from which they depend are nonobvious. *Hartness Int'l, Inc. v. Simplimatic Eng'g Co.*, 819 F.2d 1100, 1108, 2 USPQ2d 1826, 1831 (Fed. Cir. 1987); *In re Abele*, 684 F.2d 902, 910, 214 USPQ 682, 689 (CCPA 1982); see also *In re Sernaker*, 702 F.2d 989, 991, 217 USPQ 1, 3 (Fed. Cir. 1983). See also *Kovin Assoc. v. Extech/Exterior Technologies*, 2006 U.S. Dist. LEXIS 63250 (N.D. Ill. 2006), citing *Trintec Indus., Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 1296 (Fed. Cir. 2002). Thus, claims 3-18 are not unpatentable over Barclay, Tanaka, Yokochi and Fan and should be allowed.

Reconsideration and allowance of this application is respectfully requested.

Respectfully submitted,



Blake E. Vande Garde
Attorney for Applicant
Registration No. 58,264

Customer No. 29494
Hammer & Associates, P.C.
3125 Springbank Lane, Suite G
Charlotte, NC 28226
Telephone: 704-927-0400
Facsimile: 704-927-0485
H:\2024\004\AmendmentAF090110.doc